Journal of the Endocrine Society

J Endocr Soc. 2019 Apr 15; 3(Suppl 1): SAT-512.
Published online 2019 Apr 30.
doi: 10.1210/js.2019-SAT-512: 10.1210/js.2019-SAT-512

PMCID: PMC6552266

SAT-512 Severe Hypocalcemia Presenting as Status Epilepticus after Denosumab Use in Metastatic Prostate Cancer

Zeb Saeed, MD and Ammara Aziz, MD

Indiana University School of Medicine, Indianapolis, IN, United States

Abstract

Introduction: Denosumab decreases the incidence of skeletal-related events in patients with metastatic bone disease and is used routinely as part of the therapeutic strategy for various cancers. However, it is associated with a high risk of hypocalcemia with incidence of high-grade hypocalcemia (defined as total calcium < 7mg/dl) as high as 5.1% in patients with castrate-resistant prostate cancer. We present a case of severe hypocalcemia presenting with status epilepticus 32 days after administration of denosumab. **Case**: A 83 year old African American man presented to the emergency room with status epilepticus. Initial labs revealed a critically low calcium (Ca) of <5mg/dl (8.5-10.1) with albumin 2.2 g/dl (3.4-5.0), ionized calcium 1.09 mg/dl (4.6-5.1) and creatinine (Cr) 3.68 mg/dl (0.67-1.17). QTC was prolonged at 544ms (<400ms). He was intubated for airway protection and a continuous infusion of intravenous calcium gluconate was initiated. Three months prior, he had been diagnosed with prostate cancer with diffuse osteoblastic metastases to his ribs, cervical, thoracic, lumbar and sacral vertebrae, right humerus and bilateral iliac bones. He received a first dose of conventional chemotherapy and 120mg denosumab subcutaneously 32 days prior to hospital admission. Lab investigations then were pertinent for Ca of 9 mg/dl, Cr 1.46 mg/dl, and alkaline phosphatase 362 Units/L (25-125). A 25-hydroxy vitamin D (25-D) was not checked. Further evaluation demonstrated intact parathyroid hormone 677.2 pg/ml (18.4-80.1), alkaline phosphatase 397 Units/L, phosphorus 3.6 mg/dl (2.5-4.9) and 25-D 18 ng/ml (30-100). He was also found to have metastatic obstruction of both ureters which had resulted in acute kidney injury. He was slowly weaned off the intravenous calcium and started on calcitriol 2mcg twice daily, 4 gram elemental calcium daily via feeding tube and cholecalciferol 6000 units daily. Calcium levels remained stable at 8.0-8.5mg/dl on this regimen. Given the extensive metastatic disease, the patient's family elected to pursue hospice care, and he passed away 9 days later. **Conclusion:** Patients with osteoblastic metastases and renal impairment are at particularly increased risk of hypocalcemia after denosumab, which can be potentially life-threatening. Physicians caring for patients with metastatic prostate cancer should ensure that vitamin D levels are replete and calcium levels are normal prior to administration of denosumab, monitor calcium

levels closely, and counsel them about the signs and symptoms of hypocalcemia to allow prompt diagnosis and treatment.